



## Cavum oris constriction on patients with enteropathic arthritis

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### Abstract

**Background:** Enteropathic arthritis can occur in all age groups. Enteropathic arthritis is part of spondiloarthropathy which is accompanied by chronic inflammation of the digestive tract (IBD). It mostly occurs in the age group of children and young adults with the same prevalence in men and women. **Purpose:** The following will discuss a case report of cavum oris constriction in patients with enteropathic arthritis. **Methods:** In this case, the patient is a 39-year-old female with complaints of inflammation in the digestive tract, including oral ulcers, complaints of abdominal pain and diarrhea. The patient was early diagnosed as arthritis enteropathy. In addition, sacroiliitis was found accompanied by limited movement of the hip joint and chest expansion. **Result:** The patient's colonoscopy results showed an edematous mucosa accompanied by an ulceration process. To determine the condition of the mucosa in the upper digestive tract, capsule endoscopy is performed because the patient's oral cavity is constricted. From the results of the examination, it was found that the patient was diagnosed with Chrons' Disease. So that patients get sulfasazine therapy and bilateral labialis surgery. **Conclusions:** The prognosis in these patients was good because, the patient responds to therapy where the patient's clinical complaints were diminishing.

**Keywords:** cavum oris, enteropathic arthritis, constriction

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### INTRODUCTION

The relationship between arthritis and chronic inflammatory disease in the gastrointestinal mucosa (IBD) began to be observed in 1930. It has been further investigated since the discovery of the concept of spondiloarthropathy. Enteropathic is a spondiloarthropathy accompanied by inflammation of the digestive tract (Friedman, 2005; Gorman, 2005; Salehi, & Farahbakhsh, 2014).

Oral ulcer is one of the extra intestinal manifestations of enteropathic arthritis which is quite common with an incidence rate around 11%. Apart from being found in the oral cavity, this ulcer can also occur in the walls of the pharynx and larynx, if the ulcer recovered, it can leave fibrotic tissue. This is often not a concern for clinicians. Etiology is not fully understood (Hyun Lee, 2002).

IBD is a chronic inflammatory disease of the digestive tract mucosa starting from the mouth to the anus. Consisting of 2 types, namely Ulcerative colitis (UC) and Crohn's disease (CD). Disorders in UC are more common in the large intestine, while on CD abnormalities can occur in the entire mucosa of the digestive tract, especially the small intestine. One way to distinguish it is to do an endoscopic examination that can

see mucosal abnormalities of the digestive tract, especially in the small intestine (Friedman, 2005).

The field of gastroenterology is growing rapidly with the discovery of endoscopic devices. For decades the small intestine is the "dark side" of the digestive tract. To visualize the mucosal surface starting from the mouth, stomach to the duodenum can use the upper gastrointestinal endoscopy, whereas for the part at more distal areas of small intestine could use push enteroscopy or capsule endoscopy. In Indonesia alone endoscopy by using capsules began to be known and only carried out in 2004 (Nadler, 2005; Sumadibrata, 2006). The following will discuss a case report of cavum oris constriction in patients with enteropathic arthritis.

### CASE REPORT

A female patient, Mrs. Sr., 39 years old, Javanese, unemployed, Islam (moslem), residing in Lamongan, came to dr. Soetomo hospital on October 30, 2006 with the main complaint the mouth gap become constricted between the upper lip and the lower lip.

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### Anamnesis

The patient came to dentistry department of Dr. Soetomo Hospital with main complaint of mouth constriction, so that the patient had difficulties to open her mouth. It began with stomatitis in the oral cavity. Stomatitis had been felt since 8 years ago, it occurred intermittently and worsen over time. The ulcer location was varied from the cheek area, lip corner, and palate. The difficulties of mouth opening was felt since 5 years ago, began with wounds in the corner of the lips that occurred frequently so that the upper and the lower lip become fused together, as a result the oral cavity area became smaller. Then patients went to dentistry department of Dr. Soetomo hospital. The dentist referred the patient to rheumatology department because it was suspected that the pain was related to her internal disease.

At rheumatology department, a follow-up examination was carried out. Patient often complained of feeling stiff in the back, often feel pain in hip joints. Stomach pain had disappeared since the last few years. Urination was considered normal, Defecation examination was found the diarrhea with frequency of 1-2x every week, no blood or mucus was observed.

The past medical history, the patient denied the history of smoking, drinking alcohol, diabetes, intestinal disorders, swallowing disorders, cancer, and trauma. From the family history, there were no family members that suffers with a similar disease.

### Physical examination

On the physical examination on 30 October 2006, it was found that the general condition was average, 45 kg weight, well aware, GCS: 4-5-6, blood pressure: 110/70 mmHg, pulse: 88x / minute, respiratory frequency: 20x / minute, temperature: 36.5 ° C. In head-neck examination there was no anemia, icterus, cyanosis or dyspnea. There were difficulties to open the mouth with the distance between the base of the tooth 1 cm, the opening distance of the mouth 1.5 cm, fibrotic tissue at the corner of the left and right mouth were observed, there were no enlarged lymph nodes and there was no increase in JVP. On chest examination 2 cm chest expansion was observed. In the examination of the heart, lungs, and abdomen there were no abnormalities. On examination of the extremities there is no edema and erythema. Internal and external rotation of the hip joint is limited. Schober test results were positive (13 cm).

### Laboratorium examination

Laboratory examinations were conducted on October 30, 2006 showed the following results. Hb: 11.3 g / dl; Leukocytes: 10300 / cmm; Platelets: 395000 / cmm; Hct: 0.37; LED: 35 mm / hour. GDA 89 mg / dL; SGOT 41 U / L; SGPT 48 U / L; BUN: 16 mg / dL; Serum creatinine 0.6 mg / dL; Total Bilirubin was 0.20 mg / dL; Bilirubin binding was 0.09 mg / dL; Albumin 3.4 g / dL; Globulin 3.8 g / dL; 4.4 mg / dL uric acid; K 4.30 mEq /

L; Na 138 mEq / L; Ca 9.0 mg / dL; P 4.5 mg / dL. Complete stool: Macroscopic: Liquid, light brown, blood (-), mucus (+), distinctive odor; Microscopic: erythrocytes 2-4 / lp, leukocytes 4-6 / lp, Amoeba (-) Cyst (-), Parasite eggs (-), leftovers (+).

### Radiographic Examination

Radiology examination on 30 October 2006 showed results:

- Chest X-ray : Normal
- Abdominal X-ray : Normal
- Pelvic X-ray : Bilateral sacroiliitis

### Diagnosis

The patient's early diagnosis was an enteropathic arthritis with fibrosis in oral cavity. Patient received treatment in hospital at Internal medicine ward for female patient on October 31, 2006.

### Treatment

Treatment given to the patient, as follow:

- Soft food diet with high calorie and high protein (2100 Calorie)
- Sulfasalazine, tablet 4x500 mg

### Disease progression

• While in the ward the patient gets sulfasalazine tablets 4x500 mg

• The patient was referred to the gastroenterology department for a colonoscopy with the aim to find abnormalities in the digestive tract mucosa. After a colonoscopy, the results obtained: the cecum appears to have edematous in mucosa accompanied by an ulceration process; in the ascending colon, the transverse colon, and the descending colon were found to have many bluish shadows that common in enlarged lymph nodes; sigmoid ulcers are found; normal rectum. Conclusion: colitis and biopsy of the caecum, sigmoid and oral ulcer. Biopsy results: Microscopic: erosion with some crypts. Lamina propria: very few plasma cells, a little eosinophil. There were no displacement or signs of malignancy. Conclusions: Normal and sigmoid colitis caecum is normal. Pathology examination were also carried out on ulcers in the right and left lip corner with the results that there was a chronic inflammatory process. In gastroenterology department, patients are diagnosed as IBD and are planned to undergo a capsule endoscopy examination to find out if there are lesions in the upper digestive tract. The results of capsule endoscopy examination found no abnormalities in the digestive tract mucosa

• Patients were referred to plastic and restorative surgery department for further treatment. For treating the constricted oral cavity in the patient, surgical reconstruction of bilateral labialis oris was performed.

• After 2 months in the wards, the patient's condition was improved. Ulcers in the oral cavity were diminished. The mouth can open wider. Patients were able to eat more freely; the general condition is average. Patients were discharged based on the advice from,

rheumatology, gastroenterology and plastic and restorative surgery department.

## DISCUSSION

Spondyloarthropathy is a group of diseases that have clinical symptoms that are similar and related to HLA-B27 alleles, consisting of ankylosing spondylitis, psoriatic arthritis, Reiter syndrome, and enteropathic arthritis. Enteropathic arthritis is part of spondyloarthropathy which is accompanied by chronic inflammation of the digestive tract (IBD). This disease can affect all ages, most often in children and young adults with the same prevalence in men and women (Albar, 2006; Cush, 1999; Linden, 2001).

In this case the patient was a 39-year-old woman who began experiencing symptoms of the disease eight years earlier. Diagnosis of Enteropathic arthritis can be made if clinical symptoms of spondyloarthropathy are present with symptomatic manifestations in the gastrointestinal tract and evidence of IBD is obtained. Clinical symptoms of spondyloarthropathy include: enthesitis, sacroiliitis, oligoarticular arthritis (Taurog, 2004; Cush, 1999).

In these patients, the criteria for spondyloarthropathy are fulfilled, namely the presence of sacroiliitis accompanied by limited movement of the hip joint and chest expansion. With the symptoms of inflammation in the digestive tract, including oral ulcers, complaints of abdominal pain, and diarrhea, the patient's early diagnosis was Enteropathic arthritis. Patients are then referred to gastroenterology department for consideration of endoscopy which aims to find out if there are abnormalities in the digestive tract mucosa.

Extra articular manifestations that can occur include uveitis, diarrhea, and oral ulcers. Oral ulcers in cases of enteropathic arthritis are relatively rare, which is only about 11% of all patients with enteropathic arthritis, but data that report oral ulcers as an initial manifestation do not exist. Oral mucosal lesions in the form of stomatitis and lesions on the cheek mucosa. Oral ulcers in this condition have a clinical feature of painful single or multiple ulcers with erythematous edges, located wherever non-creatinized oral mucosa are located, i.e. lips, tongue, cheek mucosa, base of the mouth, palate. Apart from being found in the oral cavity, this ulcer can also occur in the mucosa wall of the pharynx and larynx, fibrotic tissue is left when the ulcer healed. But often in oral ulcers, systemic cause is not considered if other manifestations do not stand out (Friedman, 2005; Hyun Lee, 2002).

In addition to enteropathic arthritis, oral ulcers can also be caused by various other conditions such as other systemic diseases (Behcet's Syndrome, SLE, Pemphigus vulgaris), bacterial infections (Syphilis, Tuberculosis, Gonorrhoea), viral infections (Herpes, HPV, HIV, EBV, Varicella virus Zoster), fungal infections

(Histoplasmosis, Candidiasis), traumatic ulcers, and malignancies (Scully, 2000).

In these patients the initial symptom was a wound in the oral cavity that has arisen over and over again over the past eight years. The wound affected almost all parts of the oral cavity even to the corners of the lips. As a result of the injury, fibrotic tissue was formed at the corners of the patient's mouth so that the tip of the upper and lower lip fused together, the oral cavity constricted further and results in the patient being unable to open his mouth freely. No history of trauma and malignancy.

IBD is a chronic inflammatory disease of the digestive tract mucosa. Inflammation can occur from the mouth to the anus. IBD consists of 2 types, namely Ulcerative colitis (UC) and Crohn's disease (CD). Clinical symptoms of IBD include abdominal pain, diarrhea, presence of blood in the stool during bowel movements, tenesmus, from laboratory tests found to increase blood sedimentation rate (LED). Serological marker examinations that can be used are perinuclear antineutrophil cytoplasmic antibodies (pANCA) and anti-Saccharomyces cerevisiae antibodies (ASCA). In UC patients, 60-70% of the pANCA test showed positive results while on CD patients only 5-10% had positive pANCA tests. Conversely the ASCA test showed positive results about 60-70% in CD patients and only 10-15% in UC patients (Friedman, 2005).

Endoscopic examination revealed lesions in the digestive tract mucosa. In UC mucosal lesions usually occur in the large intestine. Lesions occurred in the rectum but can also spread to all parts of the colon. 40-50% of patients experience lesions that are limited to the rectum and rectosigmoid. 30-40% of patients experience lesions in the sigmoid, and about 20% experience lesions in the entire colon. The process of lesions is usually limited to the mucosa and the superficial part of the submucosa. Lesions are continuous. On colonoscopy, a mucosal picture is usually obtained with edema, erythema, granular, and the disappearance of a normal vascular composition (Kagnof, 2002).

Whereas on CD lesions can occur starting from the oral cavity to the anus. Lesions are usually multiple and in severe conditions lesions can enlarge, deep, sometimes related to each other so that the lesion appears in linear form. 30-40% of patients experience lesions in the small intestine region, 40-55% experience lesions in the small intestine and large intestine. 90% of small intestine lesions occur in the ileum. A small portion experiences lesions in the mouth and oesophagus. On endoscopic examination there will be a picture of aphthous ulcers, cobble stoning, and discontinuous lesions (Fawaz, 2007; Friedman, 2005).

From the clinical symptoms of this patient there are complaints of stomatitis, cavum oris constriction, the presence of fibrotic tissue in the corner of the mouth, intermittent abdominal pain, and diarrhea. From laboratory tests, an increase in LED was obtained. A

**Table 1.** Different clinical, Endoscopic, and Radiographic Features

	<i>Ulcerative Colitis</i>	<i>Crohn's Disease</i>
<b>CLINICAL</b>		
Gross blood in stool	Yes	Occasionally
Mucus	Yes	Occasionally
Systemic symptoms	Occasionally	Frequently
Pain	Occasionally	Frequently
Abdominal mass	Rarely	Yes
Significant perineal disease	No	Frequently
Fistulas	No	Yes
Small-intestinal obstruction	No	Frequently
Colonic obstruction	Rarely	Frequently
Response to antibiotics	No	Yes
Recurrence after surgery	No	Yes
ANCA-positive	Frequently	Rarely
ASCA-positive	Rarely	Frequently
<b>ENDOSCOPIC</b>		
Rectal sparing	Rarely	Frequently
Continuous disease	Yes	Occasionally
"Cobblestoning"	No	Yes
Granuloma on biopsy	No	Occasionally
<b>RADIOGRAPHIC</b>		
Small bowel significantly abnormal	No	Yes
Abnormal terminal ileum	Occasionally	Yes
Segmental colitis	No	Yes
Asymmetric colitis	No	Yes
Stricture	Occasionally	Frequently

**Note:** ANCA, antineutrophil cytoplasm antibody; ASCA, anti-Saccharomyces cerevisiae antibody.

colonoscopy is found in the cecum with edematous mucosa accompanied by an ulceration process; in the ascending colon, the transverse colon, and the descending colon are found to have many bluish shadows which are common in enlarged lymph nodes; in the sigmoid it is found that the ulcer is discontinuous where the biopsy results are active colitis. From the results of the examination the patient was diagnosed with a CD with a differential diagnosis UC. Marker serological examination was not carried out due to limited costs.

Endoscope is a tool used to examine the digestive system cavity visually so that it can be seen the mucosal surface of the organ. Aside from being a diagnostic tool, endoscopy can also be used as a therapeutic tool (Hadi, 1987; Sumadibrata, 2006). There are several types of endoscopes including: Rigid Endoscopy (rigid scope), Fiber Endoscopy (fiberscope), and Capsule Endoscopy (capsule endoscope)

Type of upper gastrointestinal endoscopy examination: Diagnostics, for example: esophagogastroduodenoscopy, jejunoscopy, enteroscopy, biopsy, endoscopic capsule, etc.

- Therapy, for example: sclerotherapy, polypectomy, oesophageal dilation, stenting, etc.

- Type of lower gastrointestinal endoscopic examination:

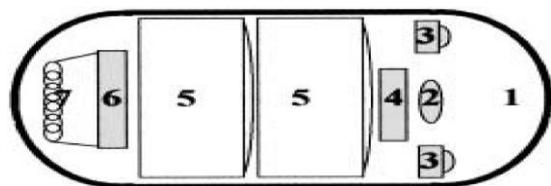
- Diagnostics, for example: colonoscopy, recto sigmoidoscopy, biopsy, capsule endoscopy, etc.

- Therapy, for example: sclerotherapy, ligation, etc. (Sumadibrata, 2006).

Visualization of the digestive tract cavity includes the oesophagus, stomach, small intestine and large intestine to be better with the discovery of fibre optic endoscopes. In simple terms, endoscopic equipment consists of an endoscopic tube where the tip that enters the patient's digestive tract has a camera and light source. On the upper endoscope, the endoscope is inserted through the oral cavity while the endoscopy below the endoscope is inserted through the anus. Images captured by the camera are routed through an endoscopic tube to a monitor for analysis by the doctor. One indication of the upper endoscope is to see abnormalities that occur on the mucous surfaces of the upper digestive tract (Sumadibrata, 2006).

In these patients it is planned for an upper endoscopic examination using an endoscopic tube but the examination cannot be performed. The problem is because the oral cavity of the patient is narrow so it is difficult to insert an endoscopic tube through the mouth. With conventional endoscopic equipment the visualization of images in the small intestine is relatively difficult. This is related to the length of the small intestine that reaches 570 cm in adults and constitutes 75% of the total length of the digestive tract. While the length of gastroscopy and conventional colonoscopy is only around 100-180 cm. The anatomy of the digestive tract also influences the accessibility of conventional endoscopy in visualizing the small intestine (Swain, 2005).

By using PE, which is a type of endoscope with a longer and more flexible design, image visualization can be done better, reaching up to 150 cm distal to the Treitz



Key: 1. Optical dome. 2. Lens. 3. Illuminating LEDs  
4. CMOS imager 5. Battery 6. ASIC Transmitter 7. Antenna

**Fig. 1.** Schematic diagram of the M2A capsule

ligament. Some limitations of the use of PE include the skills of the operator, discomfort and pain from the patient, and the risk of perforation (Zhi-zheng, 2004).

In this case the patients are actually indicated for examination using PE because it can reach up to the small intestine, but this examination is not done. In addition, technically in these patients it is not possible to do endoscopy using the upper endoscopic tube, currently at the Dr. Sutomo hospital, PE equipment is not yet available.

Along with advances in technology, an endoscopic method has been developed which is expected to be able to visualize the entire digestive cavity, especially the small intestine, by minimizing the weakness of previous endoscopy. In 1994 an endoscopic capsule technology was developed in England and Israel. In 2001 it began to be used in patients (Swain, 2003).

In simple capsules equipped with a camera will start recording images just before being swallowed. During the peristaltic process, the capsule will take pictures automatically and continuously for 7-8 hours. The images will be released by the capsule and will be received and recorded by the receiver worn at the patient's waist. Then the image will be processed into a video recording and evaluated. Capsules will be released together when the patient defecates (Eliakim, 2004).

To remain aware of any abnormalities in the small intestine, the patient is planned to undergo an examination using an endoscopic capsule. The

examination aims to determine the diagnosis, therapy and prognosis of the patient.

Endoscopic capsules are indicated for examination of abnormalities especially those found in the small intestine, including: faint bleeding in the small intestine, tumors, and lesions in the digestive tract. Several studies have shown that the use of endoscopic capsules has a better diagnostic value (diagnostic yield of 50-67%) compared to PE (diagnostic yield of 25-30%) in the examination of patients suffering from faint bleeding in the small intestine. Other indications are patients suspected of Crohn's disease (Zhi-zheng, 2004).

In this patient an endoscopic capsule examination was performed with the result that no abnormalities in the gastrointestinal tract were found, especially in the small intestine so that the final diagnosis in patients was Enteropathic arthritis with manifestations of IBD type CD.

Clinically the severity of CD can be classified into three, namely: mild, if the patient are able in terms of ambulatory, can eat orally, without dehydration, and without signs of intestinal obstruction; moderate, if the patient fails treatment and shows clinical symptoms such as fever, abdominal pain and cramps, nausea, vomiting and anemia; and severe, if the patient shows persistent clinical symptoms such as high fever, persistent vomiting, symptoms of intestinal obstruction, and repeated abdominal pain (Farrel, 2007).

In patients who can eat orally, there are no signs of dehydration and intestinal obstruction. On colonoscopy the mucosa of the cecum is obtained with edema and erythema and a single ulcer. The endoscopic examination of the capsule was not found to be abnormal. Patients can be categorized as having mild UC.

Therapy in IBD is adjusted for the severity of the disease. Likewise, with the prognosis. The milder the disease, the better the prognosis. The main therapy on the CD is sulfasalazine and other 5-ASA agents.

**Table 2.** Medical management of IBD

*Crohn's Disease: Active Disease*

Mild-Moderate	Severe	Perianal or Fistulizing Disease
5-ASA oral and/or enema	5-ASA oral and/or enema	Metronidazole and/or ciprofloxacin
Metronidazole and/or ciprofloxacin	Metronidazole and/or ciprofloxacin	Azathioprine or 6-MP
Oral glucocorticoids	Oral or IV glucocorticoids	Infliximab
Infliximab	Infliximab	Intravenous CSA
Budesonide	TPN or elemental diet	

*Crohn's Disease: Maintenance Therapy*

Inflammatory	Perianal or Fistulizing Disease
5-ASA oral and/or enema	Metronidazole and/or ciprofloxacin
Azathioprine or 6-MP	Azathioprine or 6-MP
Infliximab	Infliximab

**Note:** CSA, cyclosporine; 6-MP, 6-mercaptopurine; TPN, total parenteral nutrition.

Sulfasalazine is a disease-modifying antirheumatic drug (DMARDs) that is used as a therapy for inflammation of the gastrointestinal joints and mucosa. The dose used is 2-3 g / day (Friedman, 2005).

This patient received Sulfasalazine tablets 4x500mg / day. The prognosis in these patients is good because the patient responds to therapy where the patient's clinical complaints are diminishing. Patients are also included in the UC mild criteria.

The main complications that can occur on capsule endoscopy are retention of capsules and disturbance of bowel movements. If that happens, the capsule must be taken back either by using endoscopy or surgery (Jakobs, 2006; Eliakim, 2004). The second day after capsule endoscopy, the patient can defecate normally and the endoscopic capsule comes out together with the patient's stool.

## CONCLUSIONS

A case of a female patient, 39 years old, has been reported with complaints of cavum oris constriction. From the examination performed the patient was diagnosed as arthritis enteropathic arthritis with constriction of the oral cavity. This diagnosis is related to IBD symptoms found in patients. Patients are planned to undergo an upper endoscopic examination to determine the condition of the upper gastrointestinal mucosa but because there is a constriction of the oral cavity, it is technically impossible to carry out an examination using an ordinary endoscopic tube so that a capsule endoscope is performed. From the results of the examination the patient was diagnosed with a CD. The patient received sulfasalazine therapy and performed a bilateral labialis reconstruction procedure. The patient's prognosis was good. No complications occurred in patients during the examination procedure with capsule endoscopy.

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